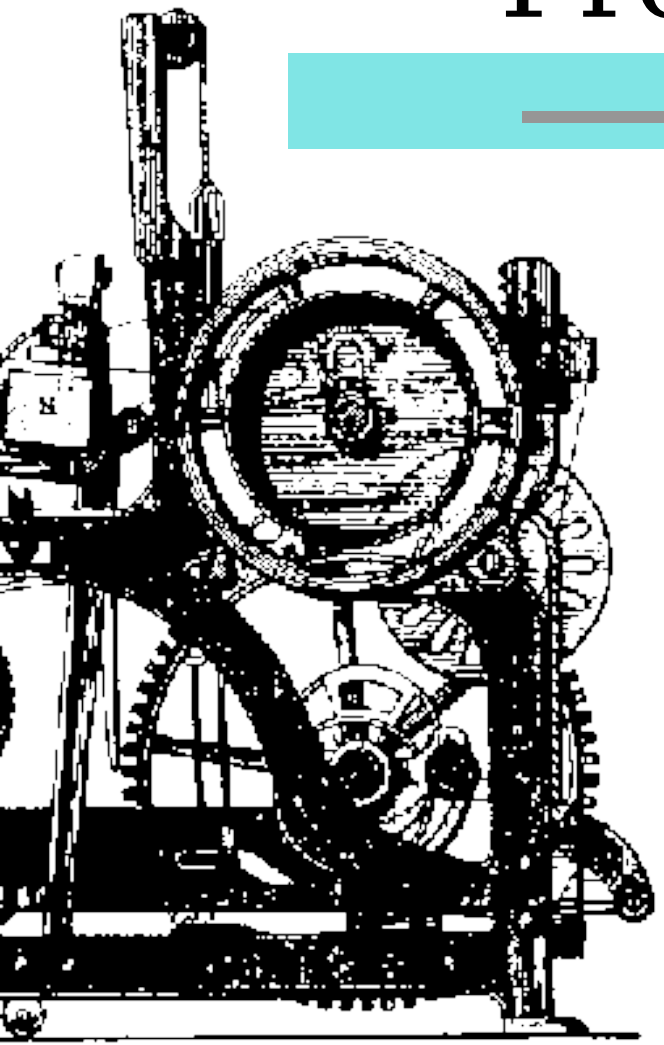
US Army Corps of Engineers

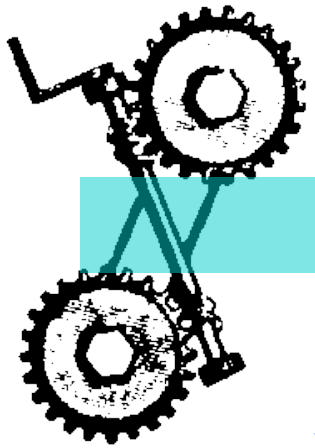
Civil Works O&M Program



Program Status

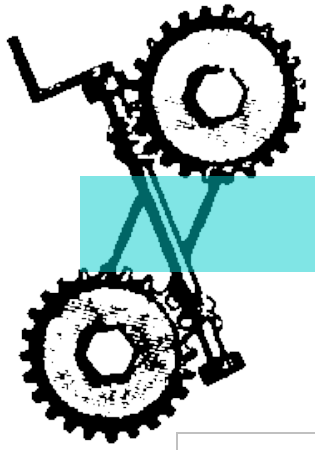
Presentation for WW Logistics Conference

New Orleans -- 17 July 2001



Topical Agenda

- O&M Program Status:
  - Background & History
  - Effectiveness & Efficiency Measures
  - Benchmarking

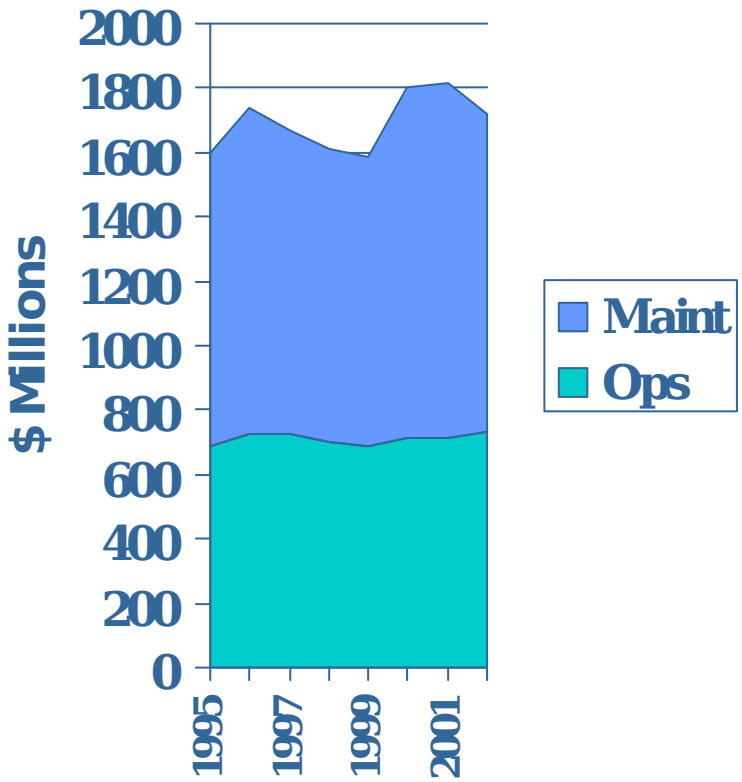


CW Infrastructure

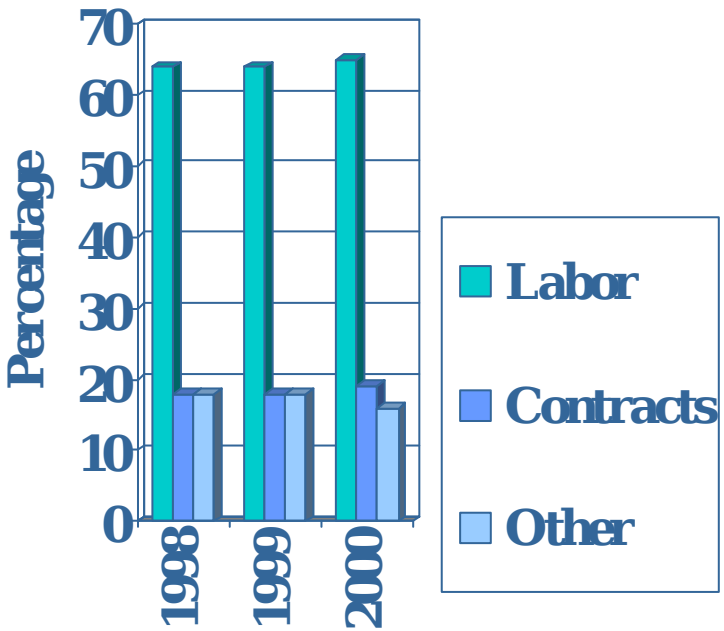
	Measurement Description	MVD	NAD	NWD	LRD	POD	SAD	SPD	SWD	TOTALS
PROJECT LANDS & WATE	Total Area (Land, Water, & Easement)	1,928,555	165,491	2,966,459	1,558,815	19,709	1,658,024	315,911	2,988,825	11,601,789
	Total Pool (Fee & Easement)	1,018,008	27,486	1,689,194	610,914	0	974,069	50,130	1,231,928	5,601,729
	Total #of Visitors	53,354,800	10,325,400	47,001,300	102,143,500	162,100	67,300,200	12,519,300	83,090,300	375,896,900
	Total #of Projects	49	50	78	127	1	27	34	90	456
	Total Fee Lands	942,167	142,259	2,317,608	943,307	19,001	902,584	155,715	2,329,923	7,752,564
NAVIGATION FEATURES	Locks Sites	62	4	10	63		31	0	21	191
	Average Age (based on year opened)	50	69	58	61		36		37	
	Maximum Age	88	85	128	165		86		58	
	Minimum Age	7	60	8	4		10		31	
	Lock Chambers	67	4	15	98		31		21	236
	Improved/Maintained Channels (miles)	5120	2970	2420	3180	4150	5070	300	1390	24600
	Shallow Draft Harbors	59	247	26	72	25	118	13	12	572
	Deep Draft Harbors	6	108	34	89	30	46	32	13	358
HYDROPOWER PLANTS	Total #of Plants	4	0	30	10	0	13	0	18	75
	Total #of Generating Units	9	0	196	33	0	53	0	55	346
	Total Capacity (Megawatts)	226.5	0	15569.2	934.6	0	2178.5	0	1726.2	20635
KEY FLOATING PLANT	Hopper Dredges	1	1	2						4
	Dust Pan Dredges	3								3
	Cutter Head Dredges	1								1
	Sidecaster Dredges						3			3
	Special Purpose Dredge						1			1
PUBLIC BRIDGES		38	61	67	30	0	0	8	37	241

O&M Program Components

- O&M Budgets for 1995-2002 average $1.693 Billion
- Operations component averages 42% of budget
- Maintenance component averages 58%

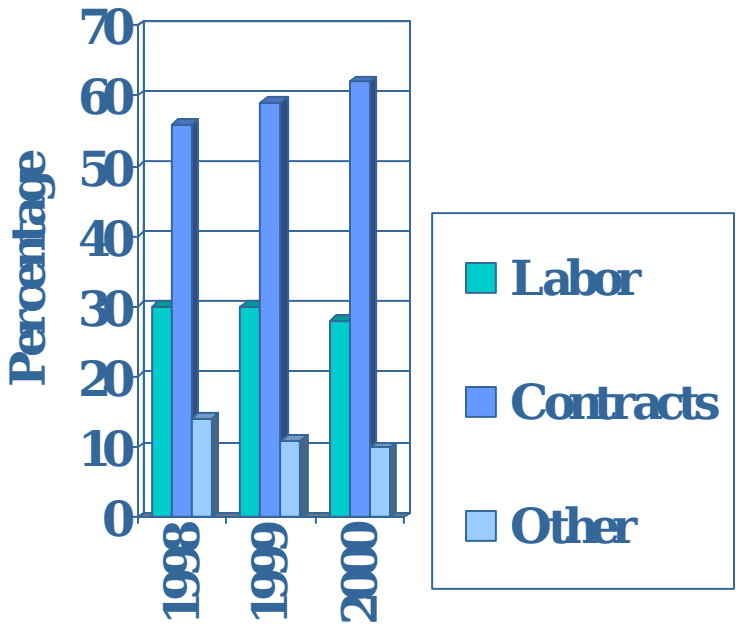


Operations Component



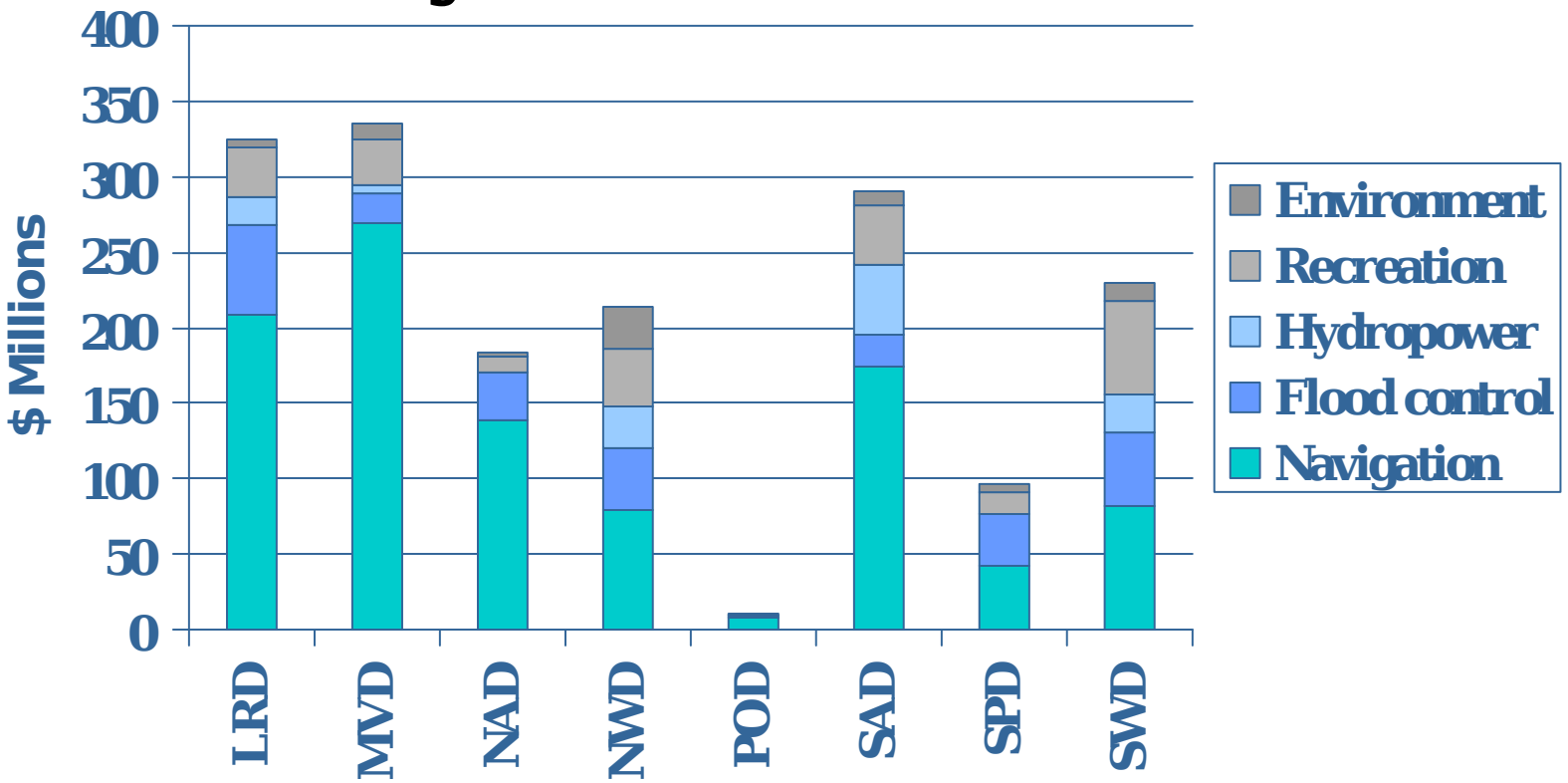
- FY98 -FY02 Avg.
- 65% of Operations budget is expended on hired labor
- 19% of Operations budget is for Contracting
- 16% of Operations is for other (materials, supplies, rent, utilities)

Maintenance Component

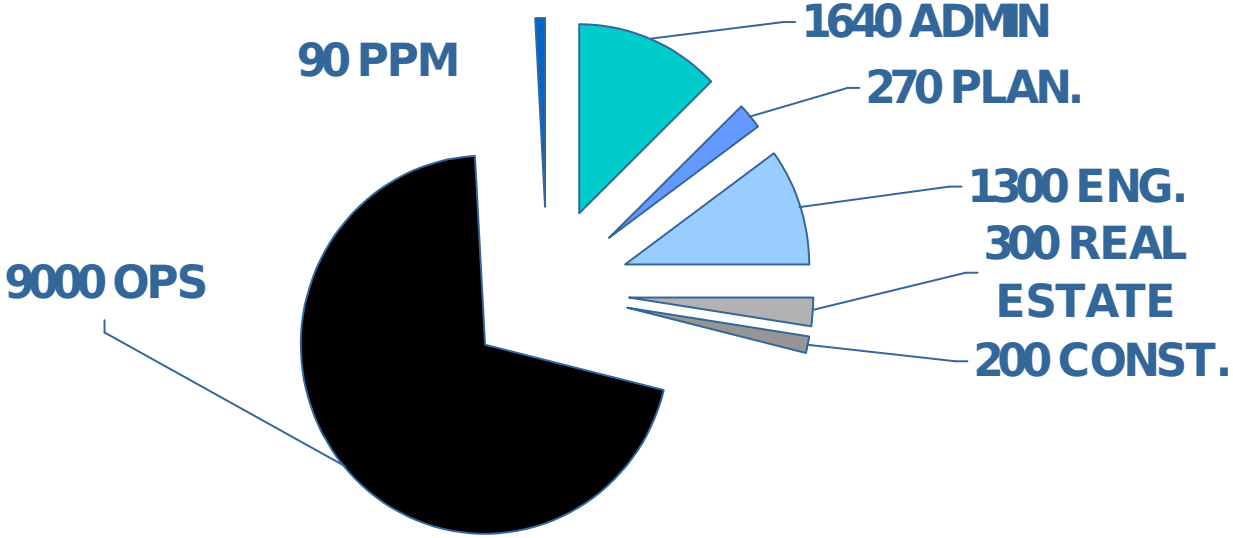


- FY98- FY02 Avg.
- 30% of Maintenance budget is expended on hired labor
- 60% of Maintenance budget is for Contracting
- 10% of Maintenance is for other (materials, supplies, rent, utilities)

O&M Business Functions by MSC (FY 2002)



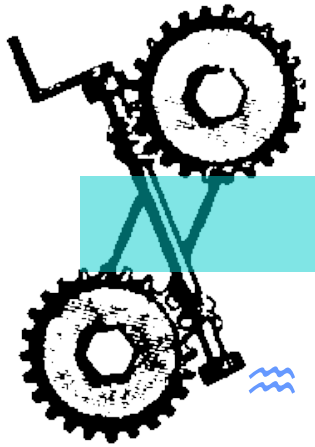
1997 O&M Funded FTE's



8400 Ops personnel at projects (5400 Wage Grade)
600 Ops personnel at districts
3800 in support functions paid from O&M

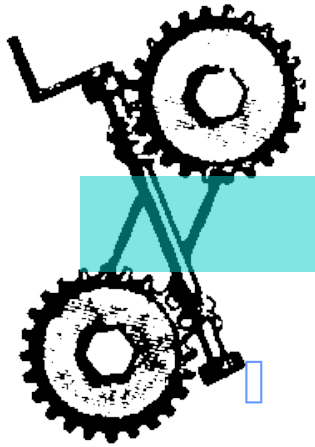
O&M Funded FTEs

	FY 88	FY 91	FY 97
Ops	10700	9530	9000
Spt	3550	4370	3800
Ratio (Ops to Spt)	3.01 to 1	2.18 to 1	2.37 to 1



Historical Perspective

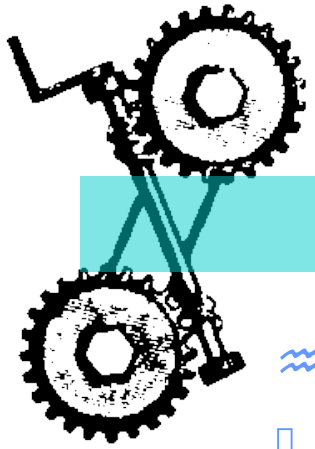
- Tisdale Report completed in 1998 was comprehensive review of all Corps projects on a Business function by business function basis
  - Led to COE's in-depth O&M Review CY 1999
  - Comprehensive Snapshot of O&M Business
  - Perhaps most in depth review of O&M activities in Corps history
  - All participants gained new insight into scope and complexity of O&M business



Issues

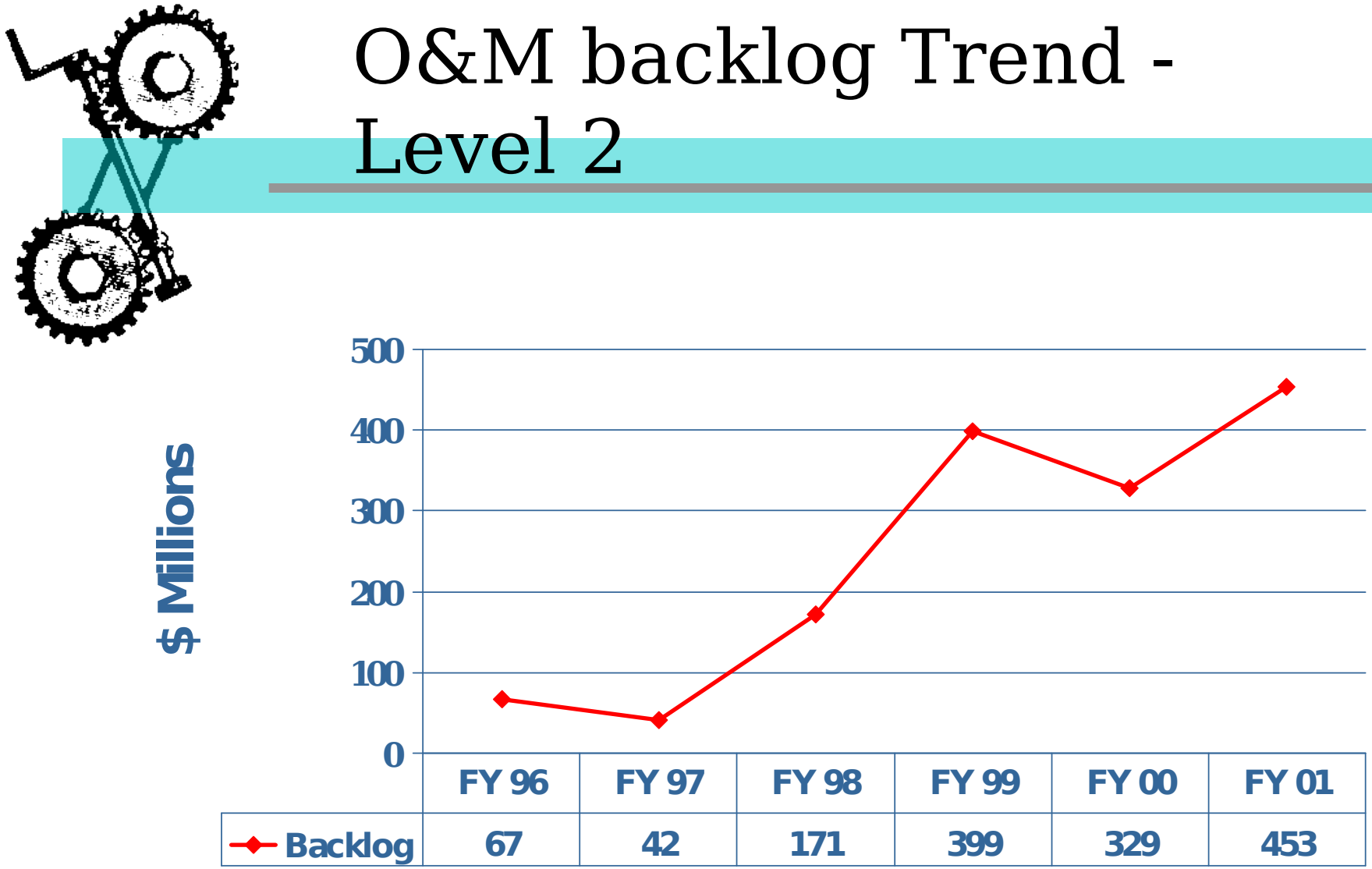
- How do we accomplish O&M Budget Prioritization?
- Are we providing equitable services / service levels at similar facilities across the nation?
- Do we have a comprehensive understanding of the maintenance backlog?
- Do we have the right kind and quantity of support plant and infrastructure?
- What regional solutions are appropriate to the O&M function?

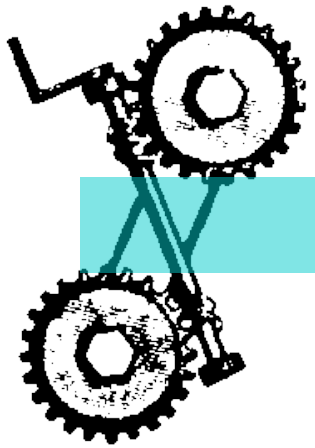
Outcomes



- MSC's held O constant
- Various initiatives to improve effectiveness of budgeting and management of scarce resources
- Major focus on reducing carryover and maximizing execution -- extremely successful
- Major MSC efforts to clean house and reduce unnecessary property, plant and equipment.
- Identification of critical maintenance backlog in words and pictures (1000+ examples identified by the field)
- Briefed to OMB in 2000

O&M backlog Trend - Level 2



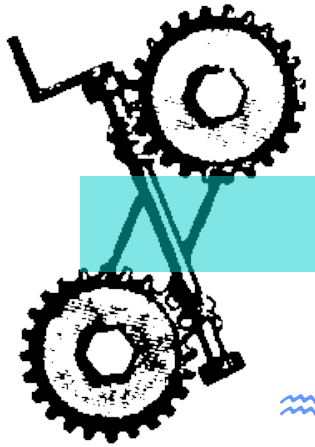


Measures of Effectiveness - Recreation Benchmarking

Federal Recreation Fee Program 1992-1994

Agency	Average Annual Visitation	Average Annual Recreation Program Cost	Cost Per Visitor	Average Annual User/Entrance Fee Income	% of Recreation Program Paid For By Fees
Army Corps of Engineers	377 Million	$ 184 Million	$0.48	$22 Million	12%
Forest Service	304 Million	$ 357 Million	$1.17	$13 Million	4%
National park Service	270 Million	$ 444 Million	$1.64	$69 Million	16%
Bureau of Land Management	62 Million	$ 39 Million	$0.65	$2 Million	5%
Bureau of Reclamation	37 Million	$ 44 Million	$1.18	$1 Million	2%
Fish & Wildlife Service	28 Million	$ 28 Million	$1.00	$25 Million	6%

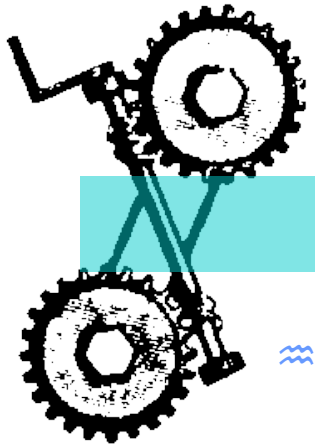
Source: House of Representatives Subcommittee on National Parks, Forests and Lands (NRLA)



Measures of Effectiveness - Recreation Benchmarking

Recent Independent Assessment Results

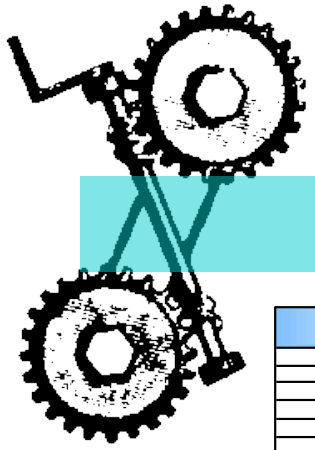
- American Customer Satisfaction Index (The Gold Standard)
- University of Michigan Business School, American Society for Quality & CFI Group Joint venture
- Independent Review of Customer Satisfaction With Recreation Experience at Corps Lakes / Corps Lands
- Overall USACE Index 71 - compares favorably to 68.6 for Federal Govt wide score and 71.2 private sector score
- High degree of trust in USACE to provide recreation opportunities in the future (Index of 79)
- Very Low Complaint Percentage -- 1.1 %



Measures of Effectiveness - Hydropower Benchmarking

Recent Independent Assessment Results

- Performed by Haddon Jackson Associates - private firm specializing in Hydropower Function Benchmarking
- Population of 244 hydropower stations from around the world representing 75,000 MW of capacity, mostly U.S. & Canadian
- Plant groupings segmented by unit size, capacity, head, age, etc.
- BPA paid for Benchmarking of 11 USACE Columbia / Snake River Plants and 7 BuRec plants
- Function costs compared to leaders and average costs on a per MWH basis
- Function Improvement opportunities identified
- Many USACE plants are functional leaders!!
- NWD is extending benchmarking to non-BPA hydropower assets.



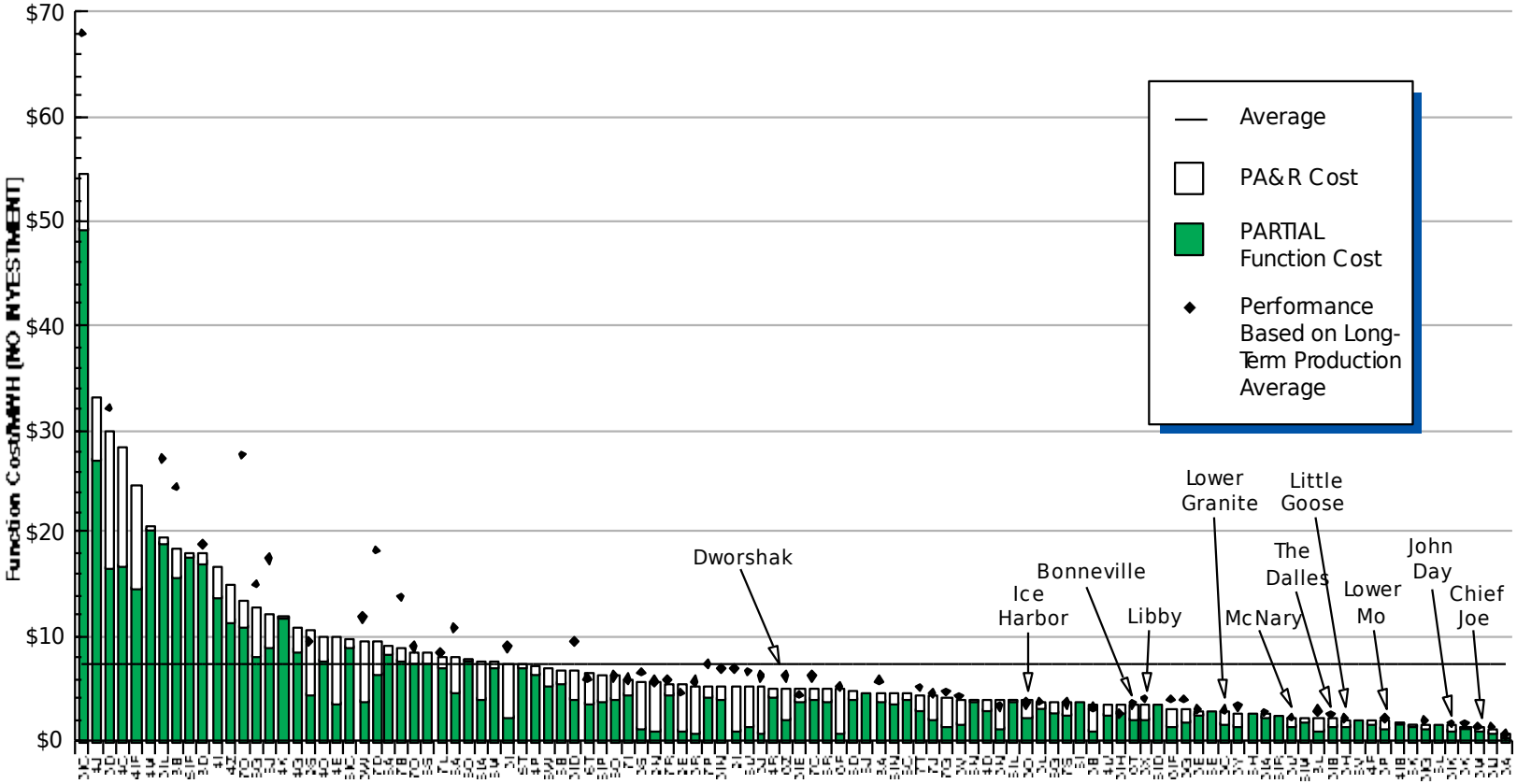
Measures of Effectiveness - Hydropower Benchmarking

Recent Independent Assessment Results

Company	Station Group Name
BC Hydro	Bridge River 1-2
BC Hydro	GM Shrum
BC Hydro	John Hart
BC Hydro	Kootenay Canal
BC Hydro	Mica
BC Hydro	Peace Canyon
BC Hydro	Revelstoke
BC Hydro	Ruskin
BC Hydro	Seven Mile
BC Hydro	Whatshan
Chelan County PUD	Chelan Lake
Chelan County PUD	Rock Island 1st Powerhouse
Chelan County PUD	Rock Island 2nd Powerhouse
Chelan County PUD	Rocky Reach
Churchill Falls (Labrador) Corp.	Churchill Falls
Electric Corporation of New Zealand	Clutha
Electric Corporation of New Zealand	Manapouri
Grant County PUD	Priest Rapids-Wanapum
Great Lakes Power, Ltd.	Magpie
Great Lakes Power, Ltd.	Michipicoten
Great Lakes Power, Ltd.	Montreal
Great Lakes Power, Ltd.	Sault
Hydro-Québec	Beaumont
Hydro-Québec	Grand-Mèrè
Hydro-Québec	La Gabelle
Hydro-Québec	La Tuque
Hydro-Québec	Rapide-Blanc
Hydro-Québec	Shawinigan 2A/2B
Hydro-Québec	Shawinigan 3
Hydro-Québec	Trenche
Iberdrola	Duero
Iberdrola	Jucar
Iberdrola	La Muela
Iberdrola	Sil
Iberdrola	Villarino
Landsvirkjun	Blanda
Landsvirkjun	Laxá
Landsvirkjun	Sigalda
Landsvirkjun	Sog
Los Angles Dept. of Water & Power	Aqueduct
Los Angles Dept. of Water & Power	Castaic 55
Los Angles Dept. of Water & Power	Castaic Pump
Los Angles Dept. of Water & Power	Owens System
Los Angles Dept. of Water & Power	The Creek System
New York Power Authority	Blenheim-Gilboa
New York Power Authority	Jarvis
New York Power Authority	Lewiston
New York Power Authority	Robert Moses
New York Power Authority	St. Lawrence
Newfoundland & Labrador Hydro	Bay D'Espoir
Northern California Power Agency	Collierville
Northern California Power Agency	New Spicer Meadows
Nova Scotia Power, Inc.	Nova Scotia Small Hydro
Nova Scotia Power, Inc.	Wreck Cove

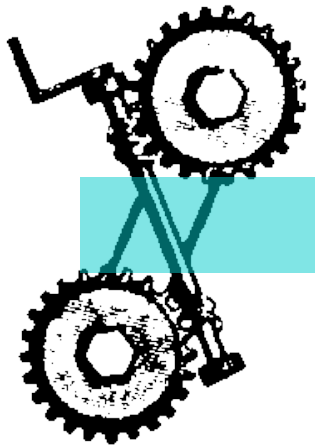
Company	Station Group Name
Oklahoma Municipal Power Authority	Kaw
Ontario Power Generation	Madawaska River System
Ontario Power Generation	Nipigon
Ontario Power Generation	RH Saunders GS
Ontario Power Generation	Sir Adam Beck 1 GS
Ontario Power Generation	Sir Adam Beck 2 GS
Ontario Power Generation	Sir Adam Beck PGS
Sacramento Municipal Utility District	SMUD Hydro
Safe Harbor Water Power Corp.	Safe Harbor Hydroelectric Plant
Scottish Power	Cruachan
Scottish Power	Galloway
Seattle City Light	Boundary
Seattle City Light	Skagit
Southern California Edison	Big Creek Pumped Storage
Southern California Edison	Big Creek System
Southern California Edison	Bishop System
Southern California Edison	East End System
Southern California Edison	Kaweah/Tule System
Southern California Edison	Kern System
Susquehanna Electric	Conowingo
Susquehanna Electric	Muddy Run
Tacoma Utilities	Cowlitz
Tacoma Utilities	Cushman
Tacoma Utilities	Nisqually
Tennessee Valley Authority	Boone
Tennessee Valley Authority	Racoon Mountain
Tennessee Valley Authority	Watauga
Tennessee Valley Authority	Wilson
TransAlta Utilities	Big Horn
TransAlta Utilities	Brazeau
TransAlta Utilities	Rocky View
TransAlta Utilities	Seebe
TransAlta Utilities	Spray
Turlock Irrigation District	Don Pedro
Turlock Irrigation District	TID Small Hydro
U.S. Army Corps of Engineers (Portland)	Bonneville
U.S. Army Corps of Engineers (Portland)	John Day
U.S. Army Corps of Engineers (Portland)	The Dalles
U.S. Army Corps of Engineers (Seattle)	Chief Joseph
U.S. Army Corps of Engineers (Seattle)	Libby
U.S. Army Corps of Engineers (Walla Walla)	Dworshak
U.S. Army Corps of Engineers (Walla Walla)	Ice Harbor
U.S. Army Corps of Engineers (Walla Walla)	Little Goose
U.S. Army Corps of Engineers (Walla Walla)	Lower Granite
U.S. Army Corps of Engineers (Walla Walla)	Lower Monumental
U.S. Army Corps of Engineers (Walla Walla)	McNary
U.S. Bureau of Reclamation	Davis
U.S. Bureau of Reclamation	Grand Coulee (New)
U.S. Bureau of Reclamation	Grand Coulee (Old)
U.S. Bureau of Reclamation	Grand Coulee (Pump Storage)
U.S. Bureau of Reclamation	Hoover Dam
U.S. Bureau of Reclamation	Hungry Horse
U.S. Bureau of Reclamation	Parker
Virginia Power	Bath Cty

Function Cost Per MWH (No Investment)



PARTIAL Function Cost/MWH The sum of the following function costs (Operations, Plant Maintenance, WW&D Maintenance, B&G Mai Support), divided by the MWHs produced by the Station Group. No investment costs or PA&R costs inc

Long-Term Production AVG Long-Term Production Average was reported based upon average yearly energy (MWH) produced over an extended period of time (i.e., over the life of the facility or as long as records permitted).



Civil Works O&M Program

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- Questions – Comments

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